CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM STATEMENT OF INVESTMENT POLICY

FOR INTERNALLY MANAGED AFFILIATE EQUITY INDEX FUNDS

April 21, 2008

This Policy is effective immediately upon adoption and replaces the Pooled Standard & Poor's 500 Equity Index Fund – Internally Managed and the Deferred Compensation Standard & Poor's 500 Equity Index Fund – Internally Managed Policy documents.

I. PURPOSE

The CalPERS Total Fund Statement of Investment Policy, adopted by the CalPERS Investment Committee ("Committee"), sets forth CalPERS' overarching investment purposes and objectives with respect to all its investment programs.

This document sets forth the investment policy ("Policy") for the Internally Managed Affiliate Equity Index Funds - ("Funds" or "Portfolios"). Throughout this Policy, Funds and Portfolios are used interchangeably. The design of this Policy ensures that the investors, managers, consultants, and other participants selected by the California Public Employees' Retirement System ("CalPERS") take prudent and careful action while managing the funds. Additionally, use of this Policy assures sufficient flexibility in managing investment risks and returns associated with the Funds.

II. STRATEGIC OBJECTIVE

Obtaining broad equity market exposure achieved by closely tracking the designated benchmark indices is the strategic objective of the Funds.

The Funds shall be managed to accomplish the following:

- A. Enhance the total returns of the overall investment program for the participants of the Funds through broad U.S. stock market exposure at low cost; and,
- B. Deliver appropriate performance results within each fund relevant to its particular benchmark and provide broad stock diversification for the participants of the Fund.

III. RESPONSIBILITIES

A. CalPERS' Investment Staff ("Staff") is responsible for the following:

- 1. All aspects of portfolio management including monitoring, analyzing, and evaluating performance relative to the appropriate benchmark.
- 2. Reporting internally to senior management concerning the implementation of this Policy. Staff's report will be prepared monthly to include, but not be limited to the following:
 - a. Current market value of the Portfolios;
 - b. Performance of the Portfolios versus the benchmarks as reported by the master <u>custodian</u>; and
 - c. <u>Performance attribution</u> analysis that accredits return to its causes.
- 3. Reporting to the Committee as needed about the performance of the Funds. The General Pension Consultant is responsible for reporting quarterly to the Committee, as described in section III.B.
- 4. Monitoring the implementation of, and compliance with, the Policy. Staff shall report material concerns, problems, changes, and all violations of Policies at the next Committee meeting, or sooner if deemed necessary. These reports shall include explanations of the violations and appropriate recommendations for corrective action.
- 5. Purchasing only securities that are outlined in this Policy.
- B. The General Pension Consultant ("Consultant") is responsible for:

Monitoring, evaluating, and reporting quarterly, to the Committee, on the performance of the Funds relative to the benchmarks and Policy. The Consultant is contractually responsible for reporting non-compliance to the Committee.

IV. PERFORMANCE OBJECTIVE AND BENCHMARK

A. Performance Objective

Achieving the return for the broad equity market is the performance objective of the Funds. To accomplish this objective, using statistical models to approximate the return of the market, rather than replicate the full composition of the index, may be more cost effective.

It is expected that <u>return deviations</u> between the Portfolios and the designated benchmarks will be random. To account for the difference in

the methodology for calculating the returns of the benchmarks and the Portfolios, the resulting return deviation may require an adjustment. CalPERS shall set parameters in the statistical models it employs in such a manner that <u>tracking error</u> shall be within the following thresholds:

- 1. Deferred Compensation S&P 500 Index: Forecasted tracking error shall be within \pm 20 basis points; realized returns should fall no more than 20 basis points below the benchmark over any 12 month period.
- 2. Pooled S&P 500 Index: Forecasted tracking error shall be within \pm 20 basis points; realized returns should fall no more than 20 basis points below the benchmark over any 12 month period.
- 3. Deferred Compensation Small and Mid Cap Index: Forecasted tracking error shall be within \pm 30 basis points; realized returns should fall no more than 30 basis points below the benchmark over any 12 month period.

B. Benchmark

Independent sources are responsible for maintaining the benchmarks as well as calculating and reporting the return of the benchmarks to CalPERS.

- Deferred Compensation Index: The benchmark shall be the Standard & Poor's 500 Index (with dividends reinvested). This benchmark is <u>capitalization weighted</u> benchmark, designed to measure performance of the broad domestic economy through changes in the aggregate market value of 500 stocks representing all major industries
- 2. Pooled Index: The benchmark shall be Standard & Poor's 500 Index excluding tobacco stocks (with dividends reinvested). This benchmark is a capitalization weighted benchmark designed to measure performance of the broad domestic economy through changes in the aggregate market value of 500 stocks representing all major industries excluding tobacco stocks.
- 3. Deferred Compensation Small and Mid Cap Index: The benchmark shall be the Russell 2500 Index (with dividends reinvested). This benchmark is a capitalization weighted benchmark designed to measure the performance of a broad array of small and mid capitalization domestic companies. The benchmark excludes the 500 largest domestic firms as measured by the Russell index methodology. There may be significant differences in the industry

and sector exposures of this benchmark if compared to a large capitalization benchmark such as the Standard & Poor's 500.

V. INVESTMENT APPROACHES AND PARAMETERS

A. Investment Approaches

The Portfolios shall be managed in a structured fashion to achieve the stated performance objective. Structured investing can be achieved through replication or through an optimized, <u>sampled</u> approach to generate an actual Portfolio with risk characteristics closely resembling the benchmark. The actual implementation used for each Portfolio will be dependent on the specific characteristics of the applicable benchmark. A benchmark with a broader number of constituents and greater exposure to small capitalization securities will typically not be replicated due to liquidity and trading cost considerations.

Where an <u>optimization</u> approach is employed, a statistical risk model is used to define and decompose the Portfolio's risk exposures versus those of the benchmark. <u>Fundamental risk models</u> measure stock returns associated with industry and other fundamental factors such as domicile, price/earnings (P/E), yield, and <u>market capitalization</u>. Such fundamental factors are referred to often as "<u>common factors</u>".

A common factor is an element of return that influences many securities and, hence, is a "common factor" in the returns on those securities. Based on the current Portfolio's exposure to industry, and common factors, the volatility of returns can be estimated. The information about volatility produced by a fundamental risk model can be used to evaluate Portfolio risk, decompose Portfolio risk according to common factor exposures, and evaluate how much of a Portfolio's return in a given period was due to each common factor exposure and how much was due to stock selection.

B. Specific Risk Parameters

Specific risk parameters shall limit the return deviation of the Portfolio versus the benchmark. Use of a number of different models shall ensure that the risk parameters are within an acceptable tolerance level to achieve the performance objectives. Since CalPERS may add or eliminate models, the specific risk parameters for each model are detailed in the Procedures Manuals.

Implementation of this program shall comply at all times with CalPERS' investment policies including, but not limited to, the following:

- 1. Statement of Investment Policy: Development of Derivatives Strategies; and
- 2. Proxy Voting Policies.

C. Permissible Securities

- 1. Equity and associated securities of U.S. publicly traded companies.
- 2. The Portfolio may hold securities not represented in the designated benchmark. Generally, these holdings in aggregate shall be limited to less than 3% of the Portfolio's total market value. Such holdings are justified by the following reasons:
 - Liquidity constraints or excessive transaction costs, such as those required to sell certain securities obtained from corporate actions or from past benchmark <u>reconstitutions</u>; or
 - b. Are held as a proxy for a benchmark asset that is illiquid or unavailable; or
 - c. Expectation of inclusion in the benchmark at the next reconstitution.
- 3. Derivative securities, as detailed in Section VII.

D. Corporate Actions

Corporate actions (e.g., <u>tender offers</u>, <u>mergers</u>, <u>Dutch-auctions</u>, or <u>spin-offs</u>) shall be handled on a case-by-case basis.

Companies which offer discount <u>Dividend Reinvestment Programs</u> (DRIP) and similar programs will be analyzed to determine if return enhancement can be added by participating in such programs.

E. Rebalancing and Trading Activity

The rebalance decision for any Portfolio is primarily based upon analysis of risk and potential performance deviation from the benchmark. Portfolio rebalancing shall be performed as necessary to maintain the Portfolio's risk characteristics in accordance with those of the benchmark. At a minimum, the Portfolio shall be reviewed monthly and at reconstitutions. The Portfolios will be analyzed to reduce systematic and nonsystematic risk while minimizing transaction costs.

A variety of trading techniques and liquidity sources shall be utilized to obtain best execution of the approved trade list.

Transaction cost analysis shall be performed and evaluated on a quarterly basis for monitoring trading efficiency as compared to that of a like universe. An outside vendor may prepare this analysis.

F. Strategy Monitoring

A monthly reporting package shall be prepared for each strategy by the Internal Equity staff assigned to manage the strategy. The reports to be included shall be those needed and appropriate to allow monitoring by more senior Internal Equity staff of the management process, risk acceptance and performance of each strategy. This reporting package may vary depending on the management process, benchmark and performance objective unique to each strategy and shall be described in the procedures manual.

The Consultant shall include strategy level information in their quarterly report to the Committee.

VI. CALCULATIONS AND COMPUTATIONS

Investors, managers, consultants, and other participants selected by CalPERS shall make all calculations and computations on a market value basis as recorded by CalPERS' Custodian.

VII. DERIVATIVES AND LEVERAGE POLICY

A. Strategies

The Fund may utilize financial <u>futures</u>, <u>equity swaps</u> and <u>options</u> in the Portfolio for the following purposes:

- 1. Permitting the investment of dividends received;
- Equitizing cash and dividends receivable;
- 3. Allowing adjustment of the Portfolio's risk characteristics in the most cost effective manner available;
- 4. Facilitating investment of cash flows related to contributions, withdrawals, or asset allocation compliance.

B. Justification

Justification for the above mentioned strategies includes the following:

- 1. Reducing transaction costs in comparison with the purchase of underlying securities;
- 2. Equitizing non-spendable cash exposures (e.g. dividend accruals) to get a highly correlated return on that component of the Portfolio;
- Providing the ability to alter risk characteristics versus the benchmark without disrupting the underlying Portfolio or unnecessarily increasing turnover; and
- 4. Obtaining matched returns between the benchmark and the Portfolio through investment in custom equity swaps and currency forwards.

C. Restrictions

Restrictions on the above mentioned strategies include the following:

- 1. Writing <u>uncovered calls</u> is prohibited;
- 2. Leveraging is prohibited. The use of futures contracts as specified in this Policy will not constitute leverage;
- 3. With the exception of equity swaps and currency forwards, trading non-exchange traded derivatives is prohibited;
- Speculating is prohibited;
- 5. Use of non-<u>CFTC</u> approved futures contracts is prohibited; and
- 6. Portfolio specific position limits will be established and monitored as detailed in the applicable procedures manual.

D. Permissible Derivatives

Derivatives utilized in the index Portfolio may include, but are not limited to the following:

- 1. Index futures;
- 2. Style futures;
- 3. Index options;

- 4. Currency forwards;
- 5. Equity swaps;
- 6. Exchange Traded Funds (ETF); and
- 7. Closed End Funds.

E. Futures Commission Merchants (FCM)

Futures Commission Merchants are selected with the following broad range of criteria:

- 1. Low cost clearing and executing charges;
- 2. Securely capitalized firm;
- 3. Clear account statements and efficient reconciliation;
- 4. Responsive personnel;
- 5. Discrete and efficient operation;
- 6. Personal interview; and
- 7. Reference checks.

VIII. GLOSSARY OF TERMS

Key words used in this policy are defined in CalPERS' Master Glossary of Terms.

Deferred Comp S&P 500 Equity Index Funds – Internally Managed

Approved by the Policy Subcommittee: October 6, 2000
Adopted by the Investment Committee: November 13, 2000
Revised by the Policy Subcommittee: December 10, 2004
Approved by the Investment Committee: February 14, 2005

Pooled S&P 500 Equity Index Funds – Internally Managed

Approved by the Policy Subcommittee: October 6, 2000
Adopted by the Investment Committee: November 13, 2000
Revised by the Policy Subcommittee: December 10, 2004
Approved by the Investment Committee: February 14, 2005

Name Change to Internally Managed Affiliate Equity Index Funds

(Consolidation of Deferred Comp S&P Equity Index Funds and Pooled S&P 500 Equity Index Fund)

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Approved by the Policy Subcommittee: March 17, 2008
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Asset Class Glossary: Equities Policy: Internally Managed Affiliate Equity Index Funds April 21, 2008

Benchmark

A set of securities with associated weights that provides a passive representation of a market segment. A benchmark's return is often used as a comparative measure of a manager's performance results in an active portfolio.

Capitalization Weighted

A weighting method based on the equity market capitalization of a stock. Market capitalization is calculated by multiplying the total outstanding shares of a stock by its price per share.

Closed End Funds

These are mutual funds professionally managed by an investment company with a finite number of shares issued. Closed end funds may be considered to be a derivative instrument as a component of their unit valuation is derived from the underlying value of the investments held by the fund.

Common Factor

An element of return that influences many securities and, hence, is a "common factor" in the returns on those securities. By virtue of their common influence on many stocks, common factors contribute to market return as well as residual returns of the stocks that they influence most. Some common factors for domestic equity are capitalization, beta, price/earnings, price/book, interest sensitivity, and yield.

Commodities and Futures Trading Commission (CFTC)

An agency of the U.S. federal government that regulates the U.S. commodity futures and options markets. The CFTC is responsible for insuring market integrity and protecting market participants against manipulation, abusive trading practices, and fraud.

Corporate Actions

An action taken by a company that causes a material change in structure including, but not limited to, name, price, shares, capitalization, or other such events. Typical corporate actions include tender offers, mergers, Dutch auctions, and spin-offs.

Custodian

A bank or other financial institution that provides custody or safe keeping of stock certificates and other assets of an institutional investor.

Derivative

An instrument whose value is based on the performance of an underlying financial asset, index, or other investment. Classes of derivatives include futures contracts, options, currency forward contracts, swaps, and options on futures.

Dividend Reinvestment Program

A plan offered by a corporation in which shareholders may purchase additional shares with cash dividends on the dividend payment date. Often times the additional shares are sold at a discount and are commission free.

Dutch-Auction

A system in which the price of an item is gradually lowered until it meets a responsive bid and is sold.

Equity Swaps

An agreement between two parties dictating a swap with payments on one or both sides, linked to the performance of equities or an equity index.

Exchange Traded Fund

An exchange-traded fund (ETF) is an investment company that is legally classified as an open-end company or a Unit Investment Trusts. An ETF is not classified as a mutual fund by the Securities and Exchange Commission because of limited redeemability. A typical ETF is similar to an index fund, and will invest in either all of the securities of a selected index or a representative sample of the securities included in the index. An ETF may be considered to be a derivative instrument as a component of their unit valuation is derived from the underlying value of the investments held by the fund.

Forecast Tracking Error

The expected or ex ante annualized standard deviation of the difference between the total return of the portfolio and the total return of the benchmark.

Fundamental Risk Model

A model used to predict the risks of individual stocks using fundamental and technical information. A covariance matrix is constructed from the factor's standard deviations and the correlations between one another. This covariance matrix can be used to predict the risk characteristics of a portfolio.

Futures

Exchange-traded contracts to buy or sell a standard quantity of a given instrument, at an agreed price, and date. A future differs from an option in that both parties are obliged to abide by the transaction. Futures are traded on a range of underlying instruments including commodities, bonds, currencies, and stock indices.

Leverage

A condition where a portfolio's market obligation may exceed the market-value-adjusted capital commitment by the amount of borrowed capital (debt).

Market Capitalization

A stock's current market price multiplied by the current common shares outstanding.

Merger

The combination of two or more companies. Strictly speaking, only combinations in which one of the companies survives as a legal entity are called mergers.

Nonsystematic Risk

That part of a total return that cannot be explained by a single- or multi-factor model of returns. Such components of return can be diversified away in a sufficiently large and well-diversified portfolio.

Optimization

The best solution among all solutions available for consideration. Constraints on the investment problem limit the region of solutions that are considered and the objective function for the problem by capturing the investor's goals correctly, providing a criterion for comparing solutions to find the better ones. The optimal solution is the solution among those admissible for consideration that has the highest value of the objective function.

Option

Contracts that give the purchaser the right, but not the obligation, to buy or sell an underlying instrument at a certain price (the exercise or strike price) on or before an agreed date (the exercise period). For this right, the purchaser pays a premium to the seller. The seller (writer) of an option has a duty to buy or sell at the strike price, should the purchaser exercise his right.

Performance Attribution

The process of attributing portfolio returns to causes. It decomposes past performance into separate components or factors contained within a multi-factor model.

Rebalancing

The process of modeling a portfolio through an optimizer or other portfolio construction method to generate a trade list that better aligns a portfolio with its investment objective.

Reconstitution

The periodic reformulation of a benchmark index which may entail the addition or deletion of securities along with changes to the parameters which determine the relative weight of included assets.

Return Deviation

The difference between the total return of a portfolio and the total return of the benchmark index.

Sampling

A method of indexation whereby a representative sample of the index constituents, rather than every share in the index, are purchased.

Specific Risk

That component of total risk that is unique or idiosyncratic to an individual security.

Speculation

Assumption of risk in anticipation of gain but recognizing a higher than average possibility of loss.

Spin Offs

Companies which are created by separation from another company and begin to trade publicly on their own.

Systematic Risk

That portion of total risk that stems from exposure to the market in general and can not be eliminated by diversification.

Tender Offer

A public offer to buy all or a portion of a specific security for cash, other securities, or both.

Tracking Error

The annualized standard deviation of the difference between the total return of the portfolio and the total return of the benchmark. The term tracking error is frequently used to describe return deviation, the total return of a portfolio, minus the total return of a benchmark index.

Uncovered Calls

A strategy in which an investor writes (sells) call options on the open market without owning the underlying security. This stands in contrast to a covered call strategy, where the investor owns the security shares that are eligible to be sold under the options contract.

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM STATEMENT OF INVESTMENT POLICY

FOR DEFERRED COMPENSATION STANDARD & POOR'S 500 EQUITY INDEX FUND INTERNALLY MANAGED

February 14, 2005

This Policy is effective immediately upon adoption and supersedes all previous Deferred Compensation Standard & Poor's 500 Equity Index Fund - Internally Managed investment policies.

LPURPOSE

This document sets forth the investment policy ("the Policy") for the Deferred Compensation Standard & Poor's 500 Equity Index Fund - Internally Managed ("the Portfolio" or "the Fund"). The design of this Policy ensures that investors, managers, consultants, or other participants selected by the California Public Employees' Retirement System ("the System") take prudent and careful action while managing the Fund. Additionally, use of this Policy provides assurance that there is sufficient flexibility in the management process controlling investment risks and returns associated with deferred compensation funds.

II. STRATEGIC OBJECTIVE

Obtaining broad domestic equity market exposure achieved by closely tracking the designated benchmark index is the strategic objective of the Fund.

The Fund shall be managed to accomplish the following:

- A. Enhance the total returns of the overall investment program for the participants of the Fund through broad U.S. stock market exposure at low cost:
- B. Deliver the performance results of the U.S. stock market defined as the Standard & Poor's 500 Stock Index, with broad stock diversification for the participants of the Fund; and
- C. Consider solely the interest of the Fund's participants and their beneficiaries in accordance with California State Law.

III. RESPONSIBILITIES AND DELEGATIONS

A. The System's Investment Committee ("the Investment Committee") is responsible for approving and amending the Policy. The Investment

Committee has delegated the responsibility for administering the Deferred Compensation S&P 500 Equity Index Fund to the Investment Staff through the Delegation of Authority (Delegation Nos. 89-13 and 95-50).

- B. The System's Investment Staff ("the Staff") duties include, but are not limited to, the following:
 - 1. Developing and recommending the Policy to the System's Investment Committee:
 - 2.Maintaining a procedures manual, subject to periodic reviews and updates, outlining Staff operational procedures used in implementing this Policy;
 - Implementing and adhering to the Policy;
 - 4. Reporting immediately to the Investment Committee all violations of the Policy with explanations and recommendations;
 - Purchasing only securities outlined in the Policy; and
 - Reporting internally to senior management on the implementation of this Policy. This report shall be prepared monthly to include, but is not limited to, the following:
 - a. Current market value of the portfolio; and
 - b. Performance of the portfolio versus the benchmark as reported by the master custodian.
 - **C.** The General Pension Consultant ("the General Pension Consultant") is responsible for monitoring, evaluating, and reporting to the Investment Committee, at least quarterly, the Fund's performance relative to the benchmark and Policy guidelines.

Monitoring shall include placing the Fund on watchlist using the following criteria:

<u>Watchlist Status</u>: If the realized annual <u>standard deviation</u> of monthly <u>return deviations</u> (<u>tracking error</u>) is greater than 20 basis points but less than 40 basis points for two consecutive quarters, the Fund shall be placed on Watchlist Status.

If the realized annual standard deviation of monthly return deviations (tracking error) exceeds 40 basis points for two consecutive quarters, the Fund shall remain on Watchlist Status and further review may be required.

IV. PERFORMANCE OBJECTIVE

The realized annual standard deviation of such monthly return deviations (tracking error) shall be limited to 20 basis points. That is, 67% of such annual deviations of monthly returns shall be 20 basis points or less; 95% of such annual deviations of monthly returns shall be 40 basis points or less. The benchmark shall be the Standard & Poor's 500 Index (with dividends reinvested). This benchmark is capitalization weighted, designed to measure performance of the broad domestic economy through changes in the aggregate market value of 500 stocks representing all major industries.

V. INVESTMENT APPROACHES AND PARAMETERS

A. Investment Approach

The Fund shall be constructed in a manner that is consistent with achieving the stated performance objective. This shall necessitate a broadly diversified portfolio managed in a passive index approach with risk characteristics closely resembling the benchmark Index. The Fund normally holds all 500 securities in the Index. Since holding the exact number of shares in the benchmark can be expensive and cause constant rebalancing, an optimized index approach may be used to create an index that closely resembles the benchmark characteristics. Periodically, the Fund may consist entirely of derivative instruments to take advantage of mispricing between the cash market and the derivatives market.

The optimization approach to be used for the Fund employs a fundamental risk model. Using this model, the Fund's risk exposures versus those of the benchmark can be defined and decomposed. Fundamental risk models measure stock returns associated with industry and other fundamental factors such as Price/Earnings (P/E), yield, and market capitalization. Such fundamental factors are often referred to as "common" factors. A common factor is an element of return that influences many securities and hence is a "common factor" in the returns on those securities. Based on the Fund's current estimated exposure to industry and common factors, the volatility of returns can be measured. The information about volatility produced by a fundamental risk model can be used to evaluate portfolio risk, decompose portfolio risk according to common factor exposures, and evaluate how much of a portfolio's return in a given period was due to each common factor exposure and how much was due to stock selection.

Tracking error can be minimized by maintaining a portfolio's risk characteristics in line with the benchmark. However, a stock market index is a purely mathematical construction. Its performance shall inevitably be different from that of any actual portfolio. This is generally because indices

are constructed mathematically in ways that can never in practice be perfectly replicated. There are technical reasons why a portfolio cannot perfectly track a benchmark index:

- 1. The Index is fully invested at all times. An actual portfolio shall inevitably carry a small amount of cash.
- 2. The Index does not incur any costs, whereas an actual portfolio shall incur transactions costs.
- 3. The Index assumes the dividend is received and its proceeds are reinvested as soon as a stock goes ex-dividend. Thus, dividend proceeds are assumed to earn the Index rate of return from the ex-dividend date. However, the dividend may not actually be received into the Fund for several weeks.
- 4.Published benchmark return calculations vary. Reasons for variations include, but are not limited to, differences in calculations of outstanding shares for individual securities, timing of additions or deletions of members into the benchmark, or treatment of dividends.
- Next-day contributions that are benchmarked to the prior day's closing price.
- 6. No fees are charged to the Index, but are charged to the fund.

B. Specific Risk Parameters

It is expected that the Fund shall be fully replicated. However, should an event arise such that the Fund cannot be fully replicated, tolerance ranges must be placed on the Fund's risk characteristics relative to those of the benchmark. The Fundamental Risk model decomposes systematic risk into that associated with six "common factors" and fifteen economic sectors.

The common factors are reported as standardized values (by subtracting the <u>capitalization weighted</u> <u>mean</u> for each stock's common factor value, and dividing by the cross sectional standard deviation), thus allowing comparative analysis between different common factor unit values. The six common factors, and their respective tolerance ranges are as follow:

 Historical Beta - The Fund's standardized exposure shall not exceed more than +/- .01 standard deviations from the benchmark's standardized exposure.

- 2. <u>Dividend Yield</u> The Fund's standardized exposure shall not exceed more than +/- .01 standard deviations from the benchmark's standardized exposure.
- 3. <u>Market Capitalization</u> The Fund's standardized exposure shall not exceed more than +/- .01 standard deviations from the benchmark's standardized exposure.
- 4. <u>Earnings/Price Ratio</u> The Fund's standardized exposure shall not exceed more than +/- .01 standard deviations from the benchmark's standardized exposure.
- Market/Book Ratio The Fund's standardized exposure shall not exceed more than +/- .01 standard deviations from the benchmark's standardized exposure.
- Interest Sensitivity The Fund's standardized exposure shall not exceed more than +/- .01 standard deviations from the benchmark's standardized exposure.
- 7. **Economic Sectors** The tolerance range for the fifteen economic sectors in the Fund shall be kept within 35 basis points of the benchmark's exposure. This shall limit monthly tracking error due to each economic sector weighting difference to less than 4 basis points with 95% probability.
- 8. Non-systematic Risk (residual risk) This is caused by different individual security weightings in the Fund relative to that of the index. Securities in the Fund in excess of +/- 3 basis points of the security's weight in the Index, shall be screened and evaluated for possible action to decrease/increase the security's weight in the Fund towards the benchmark weight.
- Model Risk This addresses whether the model used to forecast risk produces an unacceptably large bias in the portfolio optimization.

C. Restrictions

All risk characteristics of the portfolio must be within the permissible ranges specified in Part V.B.

D. Permissible Securities

1. Common stock and <u>ADRs</u> included within the Standard & Poor's 500 Index.

- The Fund may temporarily hold common stocks and ADRs, which are not represented in the designated benchmark. Such holdings are justified on the basis of the following:
 - a. Liquidity constraints or excessive transaction costs, such as those required to sell certain securities obtained from corporate actions or from past benchmark reconstitutions;
 - b. Timing of corporate action processing; and
 - c. Expectation of inclusion in the benchmark due to announced changes in benchmark constitution.

E. Corporate Actions

Corporate actions (e.g., tender offers, <u>mergers</u>, <u>Dutch-auctions</u>, and spin-offs) shall be managed on a case-by-case basis.

F. Rebalancing and Trading Activity

It is expected that the Fund shall be fully replicated. However, if there is a decision to re-balance the Fund, it shall be primarily based upon analysis of the monthly risk and performance attribution reports. Fund rebalancings shall be performed as is deemed necessary to maintain the Fund's risk characteristics in line with those of the benchmark. At a minimum, the Fund shall be reviewed monthly. Internal Equity Optimizer software shall be used to affect the rebalancings. The normal objective function of the optimization is to reduce systematic and nonsystematic risk of the Fund relative to the benchmark while minimizing transaction costs.

A variety of trading techniques and liquidity sources shall be utilized to obtain the best execution of the approved internal trade list.

VI. BENCHMARK

The benchmark shall be the Standard & Poor's 500 Index (with dividends reinvested). This benchmark is capitalization weighted, designed to measure performance of the broad domestic economy through changes in the aggregate market value of 500 stocks representing all major industries.

VII. GENERAL

Investors, managers, consultants, or other participants selected by the System shall make all calculations and computations on a market value basis as recorded by the System's Custodian.

VIII. DERIVATIVES AND LEVERAGE POLICY

Derivative instruments may be used to facilitate cost and risk management of investing in stocks publicly traded in the U.S.

A.Permitted Strategies

- 1. Substitution When the characteristics of the derivative sufficiently parallel those of the cash market instrument, the derivative may be a substituted for the cash market instrument. This strategy is particularly useful when investing cash flow or liquidating investments, as the derivative can be used to manage market entry and exit points more precisely.
- 2.Risk Control When characteristics of the derivative instrument or a combination of derivatives sufficiently parallel those of the cash market instrument, an opposite position in the derivative can be taken from the cash market instrument to alter the exposure to or the risk (volatility) of the cash instrument. This strategy is useful to manage risk without having to sell the cash instrument.
- 3. Arbitrage When the price of a derivative is more attractive than either the cash market instrument or another related derivative, then the cheaper derivative is purchased, or swapped for the cash market instrument to garner the short-term return potential from the mispriced instrument. This strategy is used to capture mispricing in the derivative instrument relative to either the cash market instrument or another derivative.

B. Uses

- 1.To equitize cash and dividends receivable;
- 2.To capture mispricings between the futures contract and the underlying basket of securities; and
- 3.To lower transaction costs.

C. Restrictions

- 1. Leverage is prohibited. The use of derivative instruments as specified in this Policy shall not constitute leverage.
- Uncovered call writing when constituting leverage is prohibited.

- 3. Traders are limited in their authorization to trade permissible derivative instruments to only the notional value of the portfolio.
- 4. <u>Speculation</u> is prohibited.

D. Permissible Derivatives

Permissible derivatives may include, but are not limited to, the following:

- 1.Index Futures:
- 2.Index Options;
- 3. Options on individual stocks contained in the Index; and
- 4.Swaps that provide for the receipt of cash flows to equal the rate of return of the S&P 500 Index or any of its constituents.

E. Permissible Short-term Investments

Short-term investments are used in connection with the aforementioned Derivatives Policy. For most derivatives, collateral is required for initial margin purposes. The cash in excess of initial margin is then invested in other short-term investments. The following short-term investments are permitted:

- Investments issued and backed by the full faith and credit of U. S. Treasury;
- 2. Commercial Paper rated A2/P2 or better; and
 - 3. State Street Investment Fund (STIF).

F. Counter-party Requirements

- 1.Counter-party creditworthiness shall be equivalent to "investment grade" of "A3" as defined by Moody's Investor Service or "A-" by Standard and Poor's. The use of counter-parties holding a split rating with one of the ratings below A3/A- is prohibited. Staff shall notify the Chief Investment Officer if a counter-party is downgraded below A3/A-while an instrument held in the Fund is outstanding with the specific counter-party. The use of unrated counter-parties is prohibited.
- 2.For non-exchange traded derivatives, if the notional amount is greater than the lesser of \$10 million or 1% of the total Fund, then Staff shall not proceed without an opinion from the General Pension

Consultant. The General Pension Consultant's positive opinion is required before an investment can be made. The General Pension Consultant shall provide a written opinion on the particular derivative strategy and the Investment Staff shall evaluate the potential counter-party exposure. The Chief Investment Officer and Senior Investment Officer for Public Markets must approve each non-exchange traded derivative transaction in advance.

G.General Requirements

- The proportion of portfolio value invested in derivative instruments can grow to 100% depending on liquidity constraints and the specific strategy employed.
- Managers must rely on the master custodian to reconcile daily cash and margin positions.

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Asset Class Glossary: Equities Policy: Deferred Compensation S&P 500 Equity Index Fund - Internally Managed March 17, 2008

American Depository Receipts (ADRs)

Receipts for the shares of a foreign-based corporation held in the vault of a U.S. bank. ADRs, which are denominated in U.S. dollars, allow U.S. investors to get exposure to foreign stocks within the U.S. stock exchanges.

Capitalization Weighted

A weighting method based on the equity market capitalization of a stock. Market capitalization is calculated by multiplying the total outstanding shares of a stock by its price per share.

Common Factor

An element of return that influences many securities and, hence, is a "common factor" in the returns on those securities. By virtue of their common influence on many stocks, common factors contribute to market return as well as residual returns of the stocks that they influence most. Some common factors for domestic equity are capitalization, beta, price/earnings, price/book, interest sensitivity, and yield.

Corporate Actions

An action taken by a company that causes a material change in structure including, but not limited to, name, price, shares, capitalization, or other such events. Typical corporate actions include tender offers, mergers, Dutch auctions, and spin-offs.

Derivative

An instrument whose value is based on the performance of an underlying financial asset, index, or other investment. Classes of derivatives include futures contracts, options, currency forward contracts, swaps, and options on futures.

Dividend Yield

An indication of the dividend generated by a stock. The yield is calculated by dividing annual dividends per share by price per share.

Dutch-Auction

A system in which the price of an item is gradually lowered until it meets a responsive bid and is sold.

Earnings/Price Ratio

The relationship of earnings per share to current stock price. The stock's trailing 12 months of reported earnings is often used as the earnings per share figure.

Equitize

Combining cash with derivative instruments to produce returns comparable to the equity market.

Fundamental Risk Model

A model used to predict the risks of individual stocks using fundamental and technical information. A covariance matrix is constructed from the factor's standard deviations and the correlations between one another. This covariance matrix can be used to predict the risk characteristics of a portfolio.

Historical Beta

The figure calculated by regressing 60 months of a stock's total return against the monthly total returns of a broadly diversified index, after subtracting the T-Bill's rate of return from both.

Interest Sensitivity

The figure calculated by regressing 60 months of a stock's total return against the monthly total returns of a long bond index, after subtracting the T-Bill's rate of return from both.

Leverage

A condition where a portfolio's market obligation may exceed the market-value-adjusted capital commitment by the amount of borrowed capital (debt).

Market Capitalization

A stock's current market price multiplied by the current common shares outstanding.

Market/Book Ratio

A stock's equity market value, divided by book value at the most recently available fiscal year end (assets minus liabilities).

Mean

The value that is to be expected on average. Among many repetitions or trials of a random process, the mean shall be the average value.

Merger

The combination of two or more companies. Strictly speaking, only combinations in which one of the companies survives as a legal entity are called mergers.

Nonsystematic Risk

That part of a total return that cannot be explained by a single- or multi-factor model of returns. Such components of return can be diversified away in a sufficiently large and well-diversified portfolio.

Objective Function

The objective function consists of the targets, penalties, rewards, and constraints selected in the optimization setup. It reflects the investment policy or goal.

Optimization

The best solution among all solutions available for consideration. Constraints on the

investment problem limit the region of solutions that are considered and the objective function for the problem by capturing the investor's goals correctly, providing a criterion for comparing solutions to find the better ones. The optimal solution is the solution among those admissible for consideration that has the highest value of the objective function.

Optimizer

Mathematical algorithm that maximizes an objective function subject to minimizing given constraints.

Performance Attribution

The process of attributing portfolio returns to causes. It decomposes past performance into separate components or factors contained within a multi-factor model.

Rebalancing

Modeling a portfolio through an optimizer to obtain roughly equal buy and sell trade lists.

Return Deviation

The difference between the total return of a portfolio and the total return of the benchmark index.

Speculation

Assumption of risk in anticipation of gain but recognizing a higher than average possibility of loss.

Standard Deviation

A statistical measure of the degree to which an individual value in a probability distribution tends to vary from the mean of the distribution. It is widely used as a measure of risk for portfolio investments. It is the square root of variance. In a symmetrical distribution, such as the normal distribution, approximately two-thirds of all outcomes fall within +/-1 standard deviation, and approximately 95 percent of all outcomes fall within +/-2 standard deviations.

Systematic Risk

That portion of total return that can be explained by a single- or multi-factor model of returns. Such components of return are directly proportional to the market's return and cannot be eliminated by diversification.

Tracking Error

The annualized standard deviation of the difference between the total return of the portfolio and the total return of the benchmark. The term tracking error is frequently used to describe return deviation, the total return of a portfolio, minus the total return of a benchmark index.

Watchlist Status

Indicates a level of concern, the degree of which shall be unique to each situation with the parameters specified in the relevant policy.

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM STATEMENT OF INVESTMENT POLICY

FOR

POOLED STANDARD & POOR'S 500 EQUITY INDEX FUND-INTERNALLY MANAGED

February 14, 2005

This Policy is effective immediately upon adoption and supersedes all previous Pooled Standard & Poor's 500 Equity Index Fund - Internally Managed investment policies.

LPURPOSE

This document sets forth the investment policy ("the Policy") for the Pooled Standard & Poor's 500 Equity Index Portfolio Fund - Internally Managed ("the Portfolio" or "the Fund"). The design of this Policy ensures that investors, managers, consultants, or other participants selected by the California Public Employees' Retirement System ("the System") take prudent and careful action while managing the Fund. Additionally, use of this Policy provides assurance that there is sufficient flexibility in controlling investment risks and returns while managing small affiliate funds.

II. STRATEGIC OBJECTIVE

Obtaining broad domestic equity market exposure by closely tracking the designated benchmark index is the strategic objective of the Fund.

The Fund shall be managed to accomplish the following:

- A. Enhance the total returns of the overall investment program for the participants of the small affiliate funds through broad U.S. stock market exposure at low cost;
- B. Deliver the performance results of the U.S. stock market defined as the Standard & Poor's 500 Stock Index, with broad stock diversification for the participants of the small affiliate funds; and
- C. Consider solely the interest of the Fund's participants and their beneficiaries in accordance with California State Law.

III. RESPONSIBILITIES AND DELEGATIONS

A. The System's Investment Committee ("the Investment Committee") is responsible for approving and amending the Policy. The Committee

delegates the responsibility for administering the Pooled S&P 500 Equity Index Fund to the Investment Staff through the Delegation of Authority (Delegation Nos. 89-13 and 95-50).

- B. The System's Investment Staff ("the Staff") duties include, but are not limited to, the following responsibilities:
 - Developing and recommending the Policy to the System's Investment Committee;
 - 2.Maintaining a procedures manual which is subject to periodic reviews and updates, outlining Staff operational procedures used in implementing this Policy;
 - Implementing and adhering to the Policy;
 - 4. Reporting immediately to the Investment Committee all violations of the Policy with explanations and recommendations;
 - 5. Purchasing only securities outlined in the Policy; and
 - 5.Reporting internally to senior management on the implementation of this Policy. This report shall be prepared monthly to include, but is not limited to, the following:
 - a)Current market value of the portfolio; and
 - b) Performance of the portfolio versus the benchmark as reported by the master custodian.
 - C. The General Pension Consultant is responsible for monitoring, evaluating, and reporting to the Investment Committee, at least quarterly, the performance relative to the benchmark and Policy guidelines.

Monitoring shall include placing the portfolio on Watchlist Status using the following criteria:

- 1.If the realized annual standard deviation of monthly return deviations (tracking error) is greater than 15 basis points but less than 20 basis points for two consecutive quarters, the Portfolio shall be placed on Watchlist Status.
- 2.If the realized annual standard deviation of monthly return deviations (tracking error) exceeds 20 basis points for two consecutive

quarters, the Portfolio shall remain on Watchlist Status and further review may be required.

IV. PERFORMANCE OBJECTIVE

The realized annual standard deviation of such monthly return deviations (tracking error) shall be limited to 13 basis points. That is, 67% of such annual deviations of monthly returns shall be 13 basis points or less; 95% of such annual deviations of monthly returns shall be 26 basis points or less.

V. INVESTMENT APPROACHES AND PARAMETERS

A. Investment Approaches

The Portfolio shall be constructed in a manner that is consistent with achieving the stated performance objective. This shall necessitate a broadly diversified portfolio managed in a passive index approach with risk characteristics closely resembling the benchmark index. The Portfolio normally holds all 500 securities in the Index. Since holding the exact number of shares in the benchmark can be expensive and cause constant rebalancing, an optimized index approach may be used to create an index that closely resembles the benchmark characteristics. Periodically, the portfolio may consist entirely of derivative instruments to take advantage of mispricing between the cash market and the derivatives market.

The optimization approach to be used for the Portfolio employs a fundamental risk model. Using this model, the Portfolio's risk exposures versus those of the benchmark can be defined and decomposed. Fundamental risk models measure stock returns associated with industry and other fundamental factors such as Price/Earnings (P/E), yield, and market capitalization. Such fundamental factors are often referred to as common factors.

A common factor is an element of return that influences many securities and hence is a "common factor" in the returns on those securities. Based on the current estimated Portfolio's exposure to industry and common factors, the volatility of returns can be measured. The information about volatility produced by a fundamental risk model can be used to evaluate portfolio risk, decompose portfolio risk according to common factor exposures, and evaluate how much of a portfolio's return in a given period was due to each common factor exposure and how much was due to stock selection.

Tracking error can be minimized by maintaining a portfolio's risk characteristics in line with the benchmark. However, a stock market index is a purely mathematical construction. Its performance shall inevitably be different from that of any actual portfolio. Generally, such results occur

because indices are constructed mathematically in ways that can never, in practice, be replicated. The following technical reasons describe why a portfolio shall not perfectly track a benchmark index:

- 1. The index is fully invested at all times. An actual portfolio shall inevitably carry a small amount of cash.
- The index does not incur any costs, whereas an actual portfolio shall incur transactions costs.
- 3. The index assumes the dividend is received and its proceeds are reinvested as soon as a stock goes ex-dividend. Thus, the dividend proceeds are assumed to earn the Index rate of return from the exdividend date. However, the dividend may not actually be received into the portfolio for several weeks.
- 4.Published benchmark return calculations vary. Reasons for variations include but are not limited to the differences in calculations of outstanding shares for individual securities, the timing of additions or deletions of members into the benchmark, or the treatment of dividends.
- 5.Standard & Poor's futures will contain the performance of tobacco stocks, whereas the portfolio will not contain these securities.

B. Specific Risk Parameters

It is expected that the portfolio shall be fully replicated. However, should an event arise such that the portfolio cannot be fully replicated, tolerance ranges must be placed on the portfolio's risk characteristics relative to those of the benchmark. The fundamental risk model decomposes systematic risk into that associated with six "common factors" and fifteen economic sectors.

The common factors are reported as standardized values (by subtracting the <u>capitalization weighted mean</u> for each stock's common factor value and dividing by the cross sectional standard deviation), thereby allowing comparative analysis between different common factor unit values. The six common factors and their respective tolerance ranges are as follows:

 Historical Beta - The Portfolio's standardized exposure shall not exceed more than +/- .01 standard deviations from the benchmark's standardized exposure.

- 2. <u>Dividend Yield</u> The Portfolio's standardized exposure shall not exceed more than +/- .01 standard deviations from the benchmark's standardized exposure.
- 3. <u>Market Capitalization</u> The Portfolio's standardized exposure shall not exceed more than +/- .01 standard deviations from the benchmark's standardized exposure.
- 4. <u>Earnings/Price Ratio</u> The Portfolio's standardized exposure shall not exceed more than +/- .01 standard deviations from the benchmark's standardized exposure.
- Market/Book Ratio The Portfolio's standardized exposure shall not exceed more than +/- .01 standard deviations from the benchmark's standardized exposure.
- 6. <u>Interest Sensitivity</u> The Portfolio's standardized exposure shall not exceed more than +/- .01 standard deviations from the benchmark's standardized exposure.
- 7. **Economic Sectors** The tolerance range for the fifteen economic sectors in the portfolio shall be kept within 35 basis points of the benchmark's exposure. This shall limit monthly tracking error due to each economic sector weighting difference to less than 4 basis points with 95% probability.
- 8. Non-systematic Risk (Residual Risk) This type of risk is caused by different individual security weightings in the portfolio relative to that of the index. Securities in the portfolio in excess of +/- 3 basis points of the security's weight in the index shall be screened and evaluated for possible action to decrease/increase the security's weight in the portfolio towards the benchmark weight.
- Model Risk This type of risk addresses whether the model used to forecast risk produces an unacceptably large bias in the portfolio optimization.

C. Restrictions

All risk characteristics of the Portfolio must be within the permissible ranges specified in Section V.B.

D. Permissible Securities

1. Common stock and <u>ADRs</u> included within the Standard & Poor's 500 Index.

- 2. The portfolio may temporarily hold common stocks and ADRs, which are not represented in the designated benchmark. Such holdings are justified on the basis of the following criteria:
 - a. Liquidity constraints or excessive transaction costs, such as those required to sell certain securities obtained from corporate actions or from past benchmark reconstitutions;
 - b. Timing of corporate action processing; and
 - c. Expectation of inclusion in the benchmark due to announced changes in benchmark constitution.

E. Corporate Actions

Corporate actions (e.g., tender offers, <u>mergers</u>, <u>Dutch-auctions</u>, and spin-offs) shall be managed on a case-by-case basis.

F. Rebalancing and Trading Activity

It is expected that the Standard & Poor's 500 Equity Index Fund shall be fully replicated. However, if there is a decision to re-balance the portfolio, it shall be primarily based upon analysis of the monthly risk and performance attribution reports. Portfolio rebalancings shall be performed as is deemed necessary to maintain the portfolio's risk characteristics in line with those of the benchmark. At a minimum, the Portfolio shall be reviewed monthly. Internal Equity Optimizer software shall be used to affect the rebalancings. The normal objective function of the optimization is to reduce systematic and nonsystematic risk of the portfolio relative to the benchmark while minimizing transaction costs.

A variety of trading techniques and liquidity sources shall be utilized to obtain best execution of the approved internal trade list.

VI. BENCHMARK

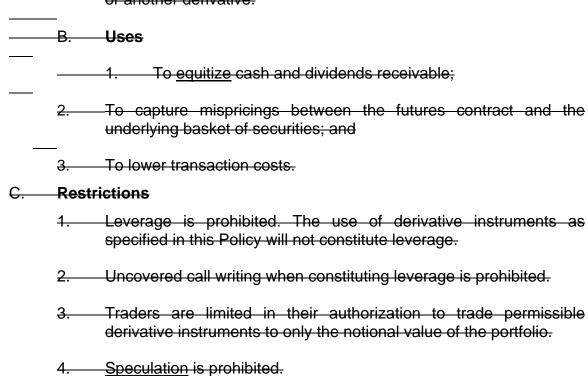
The benchmark shall be the Standard & Poor's 500 Index excluding tobacco stocks (with dividends reinvested). This benchmark is a capitalization weighted benchmark designed to measure performance of the broad domestic economy through changes in the aggregate market value of 500 stocks representing all major industries excluding tobacco stocks.

VII. DERIVATIVES AND LEVERAGE POLICY

Derivative instruments may be used to facilitate cost and risk management of investments made in stocks publicly traded in the U.S.

A.Permitted Strategies

- 1.Substitution: When the characteristics of the derivative sufficiently parallel those of the cash market instrument, then the derivative may be a substituted for the cash market instrument. This strategy is particularly useful when investing cash flow or liquidating investments, as the derivative can be used to manage market entry and exit points more precisely.
- 2.Risk Control: When characteristics of the derivative instrument or a combination of derivatives sufficiently parallel those of the cash market instrument then an opposite position in the derivative can be taken from the cash market instrument to alter the exposure to or the risk (volatility) of the cash instrument. This strategy is useful to manage risk without having to sell the cash instrument.
- 3.Arbitrage: When the price of a derivative is more attractive than either the cash market instrument or another related derivative, then the cheaper derivative shall be purchased or swapped for the cash market instrument to garner the short-term return potential from the mispriced instrument. This strategy captures mispricing in the derivative instrument relative to either the cash market instrument or another derivative.



5. The fund is prohibited from transacting in shares of tobacco stocks.

D. Permissible Derivatives

Permissible derivatives may include, but are not limited to, the following:

- 1.Index Futures;
- 2. Index Options;
- Options on individual stocks contained in the Index; and
- Swaps that provide for the receipt of cash flows to equal the rate of return of the S&P 500 Index or any of its constituents.

E. Permissible Short-term Investments

Short-term investments are used in connection with the aforementioned Derivatives Policy. For most derivatives, collateral is required for initial margin purposes. The cash in excess of initial margin is then invested in other short-term investments. The following short-term investments are permitted:

- 1. Investments issued and backed by the full faith and credit of U. S. Treasury:
- 2. Commercial Paper rated A2/P2 or better; and
 - 3. State Street Investment Fund (STIF).

F. Counter-party Requirements

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